UNDERGROUND STORAGE TANK

CLOSURE ASSESSMENT REPORT

for

PUBLIC WORKS DEPARTMENT
UST REMOVAL
KEMPER ARENA
KANSAS CITY, MISSOURI

Prepared for

CITY OF KANSAS CITY, MISSOURI
PUBLIC WORKS DEPARTMENT

PSI PROJECT NUMBER 5986H084

OCTOBER 8, 1996

psi Environmental Geotechnical Construction
Consulting • Engineering • Testing

Information To Build On

psi Environmental Geotechnical Construction
Consulting • Engineering • Testing

October 8, 1996

Mr. Robert C. Lawler, RPA
City of Kansas City, Missouri
Public Works Department
17th Floor, City Hall
414 East 12th Street
Kansas City, Missouri 64106-2798

RE: Underground Storage Tank Closure Assessment Report
Kemper Arena
1800 Genessee
Kansas City, Missouri
PSI Project Number: 5986H084

Dear Mr. Lawler:

In response to your verbal request and authorization, Professional Service Industries, Inc., has conducted an Underground Storage Tank Closure Assessment at the subject site. Enclosed are two (2) copies of the assessment report. PSI appreciates the opportunity to provide environmental services for this project.

Please don't hesitate to call should there be any questions about the assessment. Thank you for giving PSI your consideration.

Sincerely,

PSI
Advanced Environmental Management Department

Deanna D. Ross, P.G.
Staff Geologist

Andrew L. Clayton, P.G.
Senior Author

Enclosure

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FIGURES

APPENDIX

1.0 SUMMARY

PSI has conducted a UST Closure Assessment of Kemper Arena located at 1800 Genessee in Kansas City, Jackson County, Missouri. The assessment was performed for the City of Kansas City Public Works Department. The subject site contained one 550-gallon underground storage tank which was installed in the early 1970's. It was determined that the UST was utilized as a collection tank for wastewater from the boiler system in the building.

The purpose of the assessment was to: remove the USTs in accordance with the API Recommended Practice 1604: Removal and Disposal of Used Underground Petroleum Storage Tanks; to evaluate subsurface conditions; and to fulfill closure requirements in accordance with the Missouri Department of Natural Resources (MDNR) UST Closure Guidance Document, dated March 1996. A copy of the MDNR UST Closure Report, Parts A and B, is included in Appendix A.

Based on the methodologies described in this report, this assessment has revealed the following:

1. No signs of leakage or corrosion was observed in the 550-gallon UST.

2. Undisturbed soils in the excavation did not contain concentrations of BTEX, MTBE, or TPH above the MDNR Action Levels or the MDNR Soil Cleanup Guidelines Matrix.

PSI recommends closure for the subject site based on the following assessment: the source (UST) was removed; no evidence of leaks was observed in the UST or the excavation; and no contamination was identified in the excavation above the MDNR Soil Cleanup Guidelines.

2.0 INTRODUCTION

2.1 GENERAL

This report presents the findings of the Underground Storage Tank (UST) Closure Assessment conducted at Kemper Arena during the removal of one 550-gallon diesel UST utilized as a wastewater collection tank for the boiler system. The UST closure and removal was conducted in August 1996 for the City of Kansas City, Missouri, Public Works Department.

2.2 AUTHORIZATION

Authorization to perform this assessment was given verbally, with reference to PSI proposal No. 5986046, dated April 5, 1996 and the contract No. PA2869, dated January 4, 1994, between PSI and the City of Kansas City, Missouri.

2.3 SCOPE OF WORK

The scope of the assessment included supervision of the UST removal operations and evaluation of subsurface conditions. The objectives of the Closure Report are to provide the City of Kansas City, Missouri, Public Works Department with information concerning the history of the USTs at the subject site and detail the work procedures implemented during removal and closure of the USTs.

2.4 APPLICABILITY OF CLOSURE REQUIREMENTS

The UST at the subject site is not considered subject to MDNR Closure Requirements as referenced in the MDNR UST Closure Guidance Document, dated March 1996, because the UST did not store a regulated substance.

2.5 INSURANCE FUND ELIGIBILITY

As referenced in the MDNR UST Closure Guidance Document, dated March 1996, the subject UST did not store a regulated substance and is exempt from UST Law and Regulation. Therefore, the UST is not eligible for reimbursement under the Missouri Underground Storage Tank Insurance Fund.

2.6 UST REGISTRATION

The subject site UST is not registered with the Missouri Department of Natural Resources.

2.7 UST CLOSURE NOTICE

A UST Closure Notice was not filed for the removal of the subject site UST because the UST is not subject to MDNR Closure Requirements as referenced in the MDNR UST Closure Guidance Document, dated March 1996.

2.8 WARRANTY

The field observations, measurements, and research reported herein are considered sufficient in detail and scope to form a reasonable basis for a UST Closure Assessment of this property. PSI warrants that the findings and conclusions contained herein have been promulgated in accordance with generally accepted environmental engineering methods, only for the site described in this report.

The UST Closure Assessment has been developed to provide the client with information regarding apparent indications of suspected adverse environmental conditions relating to the subject property. It is necessarily limited to the conditions observed, the information available at the time of the work, and the scope of the investigation.

Due to the limited nature of the work, there is a possibility that there may exist conditions which could not be identified within the scope of the assessment or which

were not apparent at the time of report preparation. It is also possible that the testing methods employed at the time of the report may later be superseded by other methods. The description, type and composition of what are commonly referred to as "hazardous materials or conditions" can also change over time. PSI does not accept responsibility for changes in the state of the art, nor for changes in the scope of various lists of hazardous materials or conditions. PSI believes that the findings and conclusions provided in this report are reasonable. However, no other warranties are implied or expressed.

3.0 PROJECT BACKGROUND

3.1 SITE LOCATION

The site upon which this assessment was conducted is Kemper Arena located at 1800 Genessee in Kansas City, Jackson County, Missouri. This section of Kansas City is known as the bottoms. According to the USGS Kansas City, Missouri Quadrangle, 7.5-minute series topographic map, the subject site is located in the NW 1/4 of the NW 1/4 of Section 7, Township 49 North, Range 33 West. The site is located approximately 1,000 feet east of the Kansas River which flows north to the Missouri River located approximately 7,000 feet north of the subject site. The subject site is approximately 760 feet above mean sea level as indicated on the Topographic Map included as Figure 1. The exact location of the subject site is shown on the Site Location Map included as Figure 2.

3.2 SITE DESCRIPTION

The subject site is comprised of Kemper Arena and associated parking lots. The subject site area is primarily commercial development. The building is located west of the UST and a parking lot is adjacent to the south and east. Kemper Arena is currently undergoing construction activities related to a new addition.

The 550-gallon UST was located on the east side of the building in a concrete vault approximately 15 feet below ground surface. A concrete slab covered the top of the UST. The UST was utilized as a wastewater collection tank for the onsite operation of heating equipment. The UST was installed in the early 1970s when the building was constructed. The amount of time the UST has been out of service is unknown. The UST was oriented north-south approximately 5 feet below the basement level. The UST was 6 feet long with a diameter of 4 feet. The UST lines entered the east wall of the building and connected to an overflow drain from the boiler system. The vent pipe was located on the east wall of the building. The UST was constructed of single-wall steel with 4-inch diameter, single-wall, steel intake supply piping and a 2-inch diameter steel vent line.

3.3 PROJECT HISTORY

On August 12, 1996, PSI was contacted by the City of Kansas City, Missouri, Public Works Department to inspect the UST. It was necessary to expedite the removal of the UST in order to continue pillar drilling for the expansion of Kemper Arena. The UST was full and the contents appeared to be water. Arrangements were made for closure activities to begin on August 20, 1996.

4.0 CLOSURE ACTIVITIES

4.1 METHOD OF CLOSURE

Oversight of the UST removal was conducted by PSI. Removal activities were conducted by Haz-Mat Response, Inc. (Haz-Mat) and Turner Construction. A Fire Marshall's Permit was obtained for the removal activities as required by the City of Kansas City, Missouri. A copy of the permit is included in Appendix B.

The following tasks were performed by PSI, Haz-Mat, or Turner Construction at the subject site:

- Contacting the Missouri-One-Call system and performing all other activities relating to the identification of utility locations in the area of the UST removal;
- Excavation, cleaning and disposal of the UST(s) and associated piping;
- Overexcavation, transportation and disposal of any contaminated soil;
- Backfilling the UST excavation will an acceptable fill material;
- Compacting fill material and restoring the surface to its original state.

4.2 FIELD ACTIVITIES

Missouri One Call was notified for locating utilities onsite for the expansion project at Kemper Arena; the area was clear of any underground utilities.

The USTs were cleaned, removed and disposed of in accordance with recommended industry practices. All tank removal activities were performed in accordance with the API Recommended Practice 1604: Removal and Disposal of Used Underground Petroleum Storage Tanks. Photographs documenting closure activities are included in Appendix C.

Approximately 550 gallons of wastewater was pumped from the UST. The wastewater did not have a hydrocarbon odor and no sheen was observed on the surface. The

explosive levels in the UST were 0% after the UST was pumped, therefore, the UST was not cleaned onsite. The waste was stored in labeled, reconditioned, 55-gallon drums and transported by Environmental Services and Products, Inc. (ESP) to their disposal facility located at 100 South First Street in Kansas City, Kansas on a Nonhazardous Waste Manifest. The Nonhazardous Waste Manifest is included in Appendix B.

The UST was removed by Turner Construction and Haz-Mat on August 20, 1996. The exterior of the UST was corroded, however, no holes were observed in the UST. The associated piping which ran from the UST to the building was cut and sealed in place at the excavation. The UST lines in the building were not removed. The UST was transported by Haz-Mat Response for disposal. A Certificate of Destruction was obtained from American Compressed Steel, documenting the tank destruction. A copy of the Certificate of Destruction is included in Appendix B.

No backfill soils were removed from the excavation because the UST was in a concrete vault. Soils beneath the vault were sampled for analysis. The excavation was not backfilled at the time. New foundation work is under construction at the former UST location.

Soil samples from the excavation were collected and screened for organic vapor content using a Thermo Environmental Instruments Model 580B Organic Vapor Monitor (OVM) which has a manufacturer's reported detection limit of 1 part per million (ppm). The OVM was calibrated prior to use with a 250 ppm isobutylene standard at least once per day or as necessary based on usage. Plastic bags were half filled with soil, sealed and allowed to warm and volatilize into the headspace. The organic vapor concentrations of each soil sample were determined by inserting the probe of the OVM into the headspace of the sample and recording the highest sustained reading.

Soils encountered at the subject site consisted of gray silty sand to 5 feet below ground surface. No visible stains were observed.

4.3 SAMPLING ACTIVITIES

All sampling, analysis and decontamination procedures were performed in general accordance with EPA approved methodology. The testing methods are described in the PSI environmental analytical QA/QC program. This program is in compliance with various environmental regulatory agency policies and guidelines.

4.3.1 Sample Collection

All soil samples for UST closure were collected **no less than** 12 inches into undisturbed, native soil. The UST at the subject site contained wastewater and had a capacity of 550 gallons and the UST was set on concrete; therefore, closure samples were collected from the following locations.

- One grab sample was taken from the south wall along the edge of the concrete in the UST excavation at 5 feet below ground surface;
- One grab sample was taken from the hydraulic downgradient wall of the excavation pit at the point of highest visible contamination. The sample was taken from the north wall, 5 feet below ground surface;

All sample containers were labeled in accordance with MDNR recommended formats as described in Table 11 of the UST Closure Guidance Document. The samples were packaged and placed on ice in a cooler maintained at approximately 4^0 C. Chain-of-custody forms were completed and copies were enclosed in the sample cooler. Samples from the subject site were hand delivered to the laboratory by PSI personnel.

Sampling locations were shown on the Site Plan included as Figure 2.

4.3.2 Sample Analysis

All soil samples for UST closure were analyzed for the following:

- TPH by EPA Method 8015 (OA1 and OA2);
- BTEX and MTBE by EPA Method 8020.

Water samples for disposal were analyzed for the following:

- TPH by EPA Method 8015 (OA1 and OA2);
- BTEX by EPA Method 8020;
- Ignitability by ASTM Method D92.

All laboratory analysis were performed in PSI's Lawrence, Kansas analytical laboratory. All laboratory analyses were performed in accordance with appropriate USEPA-approved methods. Complete description of the analytical methods to be utilized in this investigation are contained in the PSI QA/QC manual maintained in the analytical laboratory. Copies of the method descriptions can be provided upon request.

5.0 ANALYTICAL RESULTS

5.1 OVM FIELD SCREENING

OVM readings were taken on soils during the UST excavation and are summarized below:

Sample Location	OVM Reading
North end, 5' bgs	0 ppm
South end, 5' bgs	0 ppm
East wall, 5' bgs	0 ppm
West wall, 2' bgs	0 ppm
West wall, 5' bgs	0 ppm

Overexcavation of the UST pit did not occur because of the following reasons: no staining was observed; no hydrocarbon odors were detected; and there were no measurable OVM readings sustained from the soils sampled in the excavation. OVM results for the soil samples analyzed by PSI's laboratory are also included in Table 1 in Section 5.2.

5.2 SOIL SAMPLING

Table 1 lists the analytical results and OVM readings of the soil samples analyzed for closure by PSI's analytical laboratory. The analytical reports and chain-of-custody documentation are included in Appendix D.

TABLE 1
SOIL SAMPLE RESULTS
KEMPER ARENA

Sample ID	Sample Date	OVM	BTEX & MTBE Method 8020					TPH-Purgeable Method 5030/8015	TPH-Extractable Method 3550/8015
			Benzene	Toluene	E-Benzene	Xylene	MTBE	Gasoline	Diesel
CLOSURE SAMPLES									
DG 1-North	8/20/96	0	<0.002	<0.002	<0.002	<0.004	<0.002	<0.2	<3.0
UT 2-South	8/20/96	0	<0.002	<0.002	<0.002	<0.004	<0.002	<0.2	<3.0
UST WATER									
UST Water	8/20/96	NA	<0.001	<0.001	<0.001	0.0021	<0.001	<0.1	0.3

All analytical results are reported in parts per million (ppm). NA represents a sample that was not analyzed.

The UST water was analyzed for Ignitability for disposal. The flashpoint of the water was >160 °F.

5.3 MDNR ACTION LEVELS

Soil contamination at the subject site is considered to be present if contaminant levels in soil samples analyzed exceed any **one** of the following levels:

- A TPH concentration of 50 ppm;
- A Total BTEX concentration of 1 ppm;
- A benzene concentration of 0.5 ppm; or
- A MTBE concentration of 60 ppm.

Analytical results from the excavation did not identify soil contamination at the subject site above these levels.

5.4 MDNR CLEANUP LEVELS

Soil contamination was not identified at the subject site, however, soil cleanup levels were determined by the MDNR LUST Cleanup Guidelines for undisturbed soil matrix. PSI has completed the matrix for the subject site and a copy of the completed matrix is included in Appendix A. Based on this matrix, the expected soil cleanup levels for the subject site are as follows:

- A TPH concentration of 50 ppm;
- A total BTEX <2 ppm;
- A MTBE concentration of 60 ppm.

Soils sampled and analyzed from the UST excavation at the subject site did not contain BTEX, MTBE, or TPH concentrations above the MDNR Soil Cleanup Guidelines for undisturbed soil.

5.5 GROUNDWATER SAMPLING

Groundwater was not encountered in the excavation.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 GENERAL

The assessment, conclusions, or recommendations presented herein are based on the subjective evaluation of limited data. As a result, they are intended to be and should be considered preliminary in nature.

6.2 CONCLUSIONS

The results of the closure assessment and the environmental sampling and analysis conducted by PSI at Kemper Arena in Kansas City, Missouri indicated:

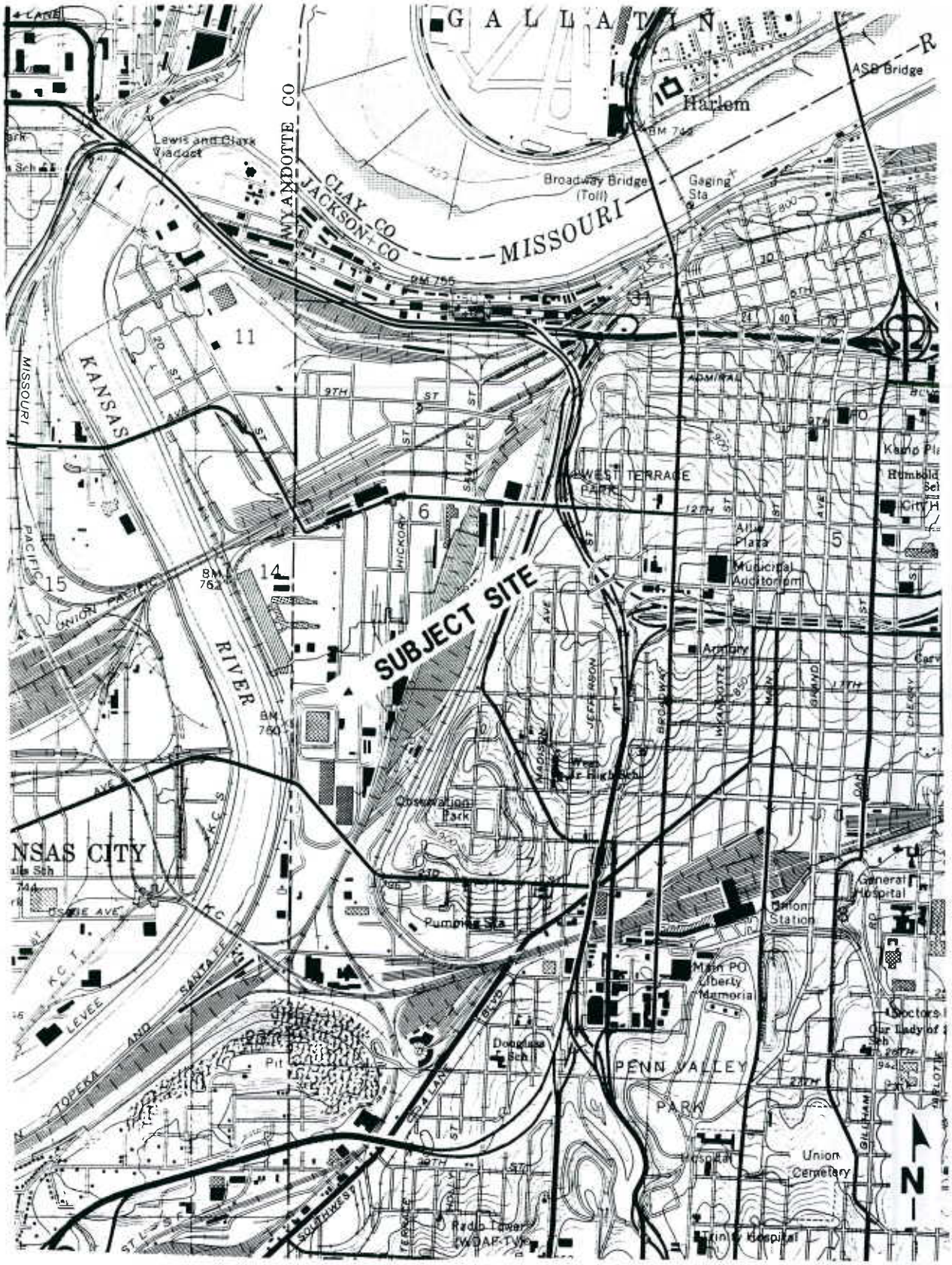
1. No signs of leakage or corrosion was observed in the 550-gallon UST.

2. Undisturbed soils in the excavation did not contain concentrations of BTEX, MTBE, or TPH above the MDNR Action Levels or the MDNR Soil Cleanup Guidelines Matrix.

6.3 RECOMMENDATIONS

Based on the results of the UST Closure Assessment and site conditions, PSI recommends closure of the Kemper Arena wastewater UST because: the source (UST) was removed; no evidence of leaks was observed in the UST or the excavation; and no soil contamination was identified in the excavation above the MDNR Action Levels or the MDNR Soil Cleanup Guidelines.

FIGURES



Site Name: Kemper Arena Heating UST Removal Kansas City, Missouri	Figure 1 Topographic Map Project No: 5986H084	Date: 1964 Photorevised: 1975 Scale: 1" = 2,000'

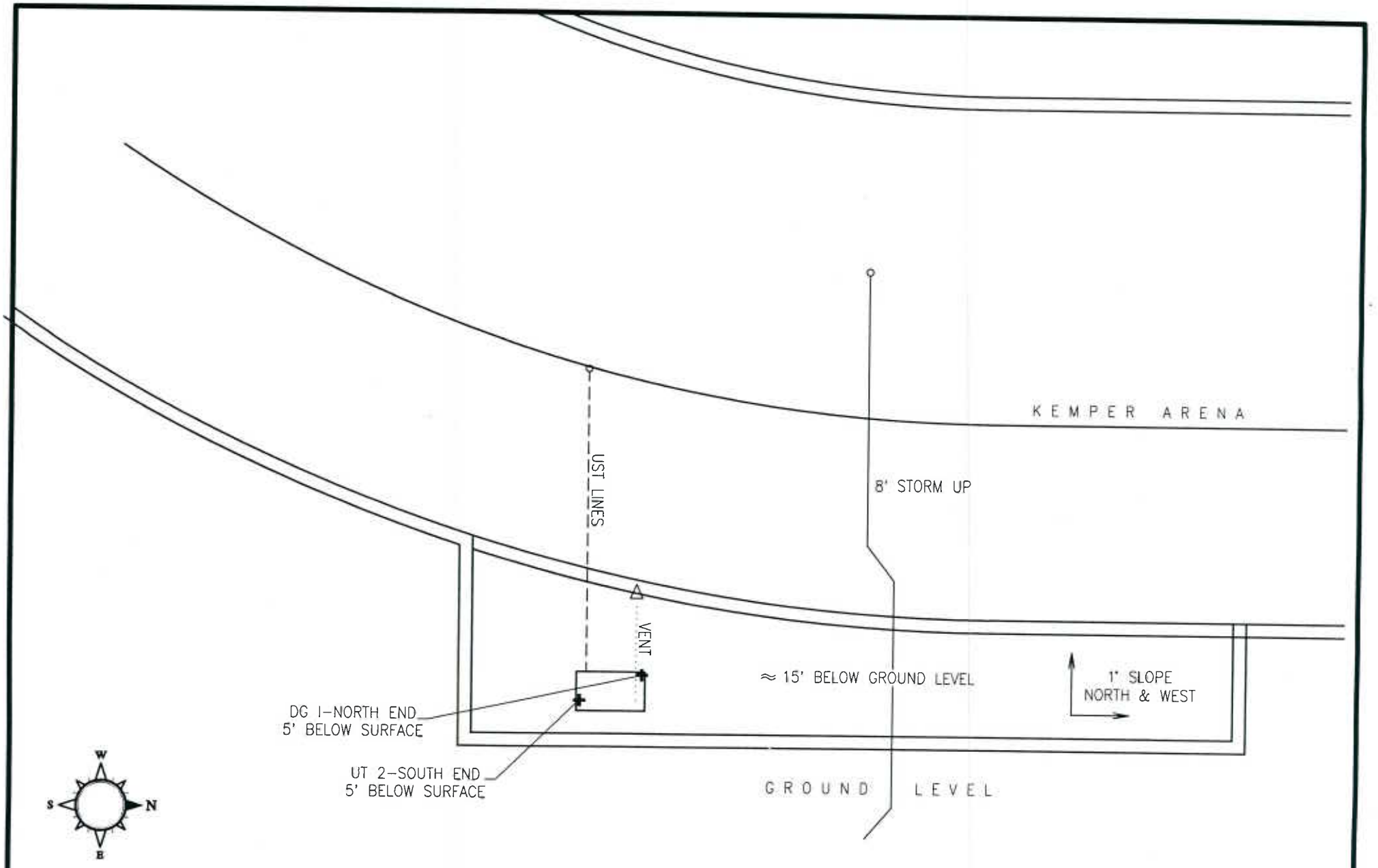


Figure 2

psi Environmental Geotechnical Construction
Consulting • Engineering • Testing

Environmental Services
4820 West 15th Street Lawrence, Kansas 66049
Tel (913) 865-9322 Fax (913) 865-9594

PUBLIC WORKS DEARTMENT CITY OF KANSAS CITY, MISSOURI	D.S. WATKINS	10/8/96	01
KEMPER ARENA UST REMOVAL KANSAS CITY, MISSOURI	1"=10'		598-6H084

APPENDIX A

MDNR UST CLOSURE REPORT
PARTS A & B
&
LUST SOIL CLEANUP GUIDELINES
FOR UNDISTURBED SOIL

MISSOURI DEPARTMENT OF NATURAL RESOURCES
HAZARDOUS WASTE PROGRAM
UNDERGROUND STORAGE TANK CLOSURE REPORT

FOR DNR USE ONLY

Date Received _____ Region _____ OWID _____ UST# _____

County _____ HWP LU# _____

SECTION I – FACILITY INFORMATION

Facility Name Kemper Arena

Address 1800 Genessee City Kansas City

ZIP Code 64108 Telephone # (816) 274-2106

Date of Project Initiation: 8-20-96 Date of Project Completion: 8-20-96

SECTION II – USTs CLOSED

Tank #	Capacity (gallons)	Year Installed	Date Removed from Service (Use)	UST Construction Material	Product Stored	Method of Closure*
*	550 gallon	1974	Unknown	Steel	Wastewater	R

Attach additional sheets if more than 4 USTs were closed.
Attach appropriate documentation of tank cleaning.

* Collection tank for wastewater from the boiler system.

* R = Removal, I = In-place

SECTION III – UST OWNER INFORMATION

Name City of Kansas City, MO/ Public Works Dept.

Address 17th Floor, City Hall, 414 E. 12th Street

City Kansas City State MO ZIP Code 64106

Contact Person Bob Lawler Telephone # (816) 274-2106

SECTION IV – PARTY PERFORMING CLOSURE

Name Professional Service Industries, Inc.

Address 4820 W 15th Street

City Lawrence State KS ZIP Code 66049

Contact Person Deanna Ross Telephone # (913) 749-2381

SECTION V – TANK DISPOSAL INFORMATION

Fate of tanks: ☒ Recycle/salvage or ☐ Landfill or ☐ Unregulated use (explain) _____

Final destination of tanks: American Compressed Steel Inc Address 1420 Woodswether Rd. Kansas City, MO 64105

Attach bill of sale/certificate of disposal.

SECTION VI – SOIL DISPOSAL INFORMATION

Cubic yards of soil excavated (total) 0 Cubic yards of non-contaminated soil returned to pit 0

0 cubic yards of contaminated soil disposed or treated at _____

Attach appropriate documentation of soil disposal or treatment.
Attach copy of "Virgin Product Disposal Form" or "Special Waste Form" if applicable.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
HAZARDOUS WASTE PROGRAM

UNDERGROUND STORAGE TANK CLOSURE REPORT – PAGE 2

SECTION VII – DISPOSAL OF PETROLEUM CONTAMINATED WATER AND SLUDGE

Gallons of wastewater generated 550 Attach any permits obtained for the disposal of wastewater.	Method of disposal: ☒ Hazardous waste disposal firm or ☐ On-site discharge under general permit limits or ☐ Discharge to wastewater treatment plant
Gallons of sludge/rinsate disposed 0 Attach appropriate documentation of waste disposal.	Hazardous waste disposal firm _____ Address _____

SECTION VIII – RESULTS OF SOIL ANALYSIS

Sample ID	oAI	TPH oA2	Benzene	Toluene	Ethyl-Benzene	Xylene	Heavy Metals*
DG1-North (4'bgs)	<0.2	<3.0	<0.002	<0.002	<0.002	<0.004	<0.002
UT2-South (4'bgs)	<0.2	<3.0	<0.002	<0.002	<0.002	<0.004	<0.002
UST Water	<0.1	0.3	<0.001	<0.001	<0.001	0.0021	<0.001

Report all results in ppm.
Attach additional sheets if necessary.
Attach lab results and chain of custody documentation.

* Waste oil USTs only. List any results above detection limits.

SECTION IX – SITE LOCATION SKETCH

Attach a sketch of the site which includes: 1) the size and contents of all USTs; 2) the locations and lengths of all fuel lines; 3) the locations of all pump islands; 4) the location of the excavation pit boundaries; 5) the locations of all required samples using the specified labeling format; 6) the location of all underground utilities within 100 ft. of the site (e.g., sanitary sewers, power lines, storm sewers, utility trenches, water lines, pipelines, etc.); 7) the location of all above ground tanks and associated piping, plus the size and contents of each; 8) the depth to the bottom of each tank and depth of all excavations; 9) the direction and degree of slope on the site; and 10) the scale of the sketch in feet; 11) All properties immediately adjacent to the site.

SECTION X – PHOTOGRAPHS

Attach color photographs of the following: 1) all sides of the removed UST(s); 2) each wall and floor of the excavation pit, if USTs are removed; 3) all sealed vent or pipe lines (if applicable); 4) the sealed UST(s), if closed in-place; and 5) the site before the initiation of the closure and after the completion of the closure.

SECTION XI – INFORMATION ON POSSIBLE RECEPTORS

Depth to groundwater 15-30 ft. Distance to ~~streams~~ river 700 ft. Distance to water wells >1,000 ft.

Distance to lakes (that are within 0.5 miles of site) — ft.

Attach completed Table 4 matrix from UST Closure Guidance Document.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
HAZARDOUS WASTE PROGRAM
UNDERGROUND STORAGE TANK CLOSURE REPORT – PAGE 3

SECTION XII – SOIL INFORMATION

Indicate the types of soil encountered during excavation and depth to each or attach a drilling log or a sketch of a side wall.

Type of Soil	Depth (ft.)
Gray silty sand	0-4'

SECTION XIII – CERTIFICATION OF COMPLETE CLOSURE

I certify that the information in this report is true and complete:

Party performing closure PSI

Signature: Deanna L Ross Date 10/7/96

Owner/operator _____

Signature: _____ Date _____

COMMENTS:

RETURN TO: Missouri Department of Natural Resources, Hazardous Waste Program, LUST Unit, P.O. Box 176, Jefferson City, MO 65102.

Table 4
LUST Soil Cleanup Guidelines for Undisturbed Soil

Site Features*	Score 15 if True		Score 10 if True		Score 5 if True		Score 0 if True	
Depth to groundwater?	> 100 ft.		100-51 ft.		50-25 ft.		< 25 ft.	X
Groundwater potable?	No						Yes	X
Drinking water supply proximity?	> 1,000 ft. away		1,000-501 ft. away		500-100 ft. away		< 100 ft. away	X
Distance to surface waters?	> 5,000 ft.		5,000-2,501 ft.		2,500-1,000 ft.		< 1,000 ft.	X
Geologic features present?	> 2,000 ft.		2,000-1,001 ft.		1,000-500 ft.		< 500 ft.	X
Man-made vertical conduits?	> 500 ft.		500-251 ft.		250-100 ft.		< 100 ft.	X
Man-made horizontal conduits?	> 250 ft.		250-101 ft.		100-50 ft.		< 50 ft.	X
Soil permeability? (see definitions)	Low		Low-Moderate		Moderate-High	X	High	
Soil thickness? (see overburden map)	> 50 ft		50-41 ft.		40-20 ft.		< 20 ft.	X
Environmentally sensitive receptors?	> 5,000 ft.		5,000-2,501 ft.		2,500-1,000 ft.		< 1,000 ft.	X
Surrounding land use?	> 1,000 ft away		1,000-501 ft. away		500-100 ft. away		< 100 ft. away	X
Future land use?	Industrial		Commercial	X			Residential	
Off-site impact?	No	X					Yes	
Subtotals		**15**		**10**		**5**		
						Total Score =		**30**

Soil Cleanup Levels (ppm)					
Total Score	195-150	149-120	119-80	79-50	49 or less
BTEX	4/20/100/100	2/10/50/50	1/5/10/10	0.5/1/2/2	B+T+E+X < 2
TPH	1000	500	200	100	50
MTBE	280		140		60

* See definitions of site features following this table.

APPENDIX B

PERMITS & APPROVALS

Kansas City Missouri
Fire Department

PERMIT(S)

This permit must be kept posted on the premises or equipment mentioned below at all times:

TO WHOM IT MAY CONCERN:

Kemper Arena (Name) 1800 Genessee (Address)

Having complied with applicable sections of the Fire Prevention Code of Kansas City, Missouri the following permit(s) are being issued:

Remove one (1) 500 gallon capacity underground diesel fuel tank

Number: № 30172

The permit(s) does not take the place of any license required by law and is not transferable. Any change in the use or occupancy of premises shall require a new permit.

Date of Issuance 8-20-96

Date of Expiration 8-21-96

DIRECTOR OF FIRE DEPARTMENT

By James C. Dudley

Chief Fire Marshal

3200-056 (7/85)

Send to:
FIRE MARSHAL'S OFFICE
22nd Floor, City Hall
414 East 12th Street
Kansas City, Missouri 64106
Make Check Payable to: City Treasurer

FIRE DEPARTMENT
APPLICATION FOR PERMIT(S)

Fire ID _____

A PLEASE PRINT OR TYPE ALL INFORMATION

Name of Business: City of KCMO/ Public Works Dept Kemper Arena Phone: 274-1900

Address of Business: 1800 Genessee Zip Code: _____

Mailing Address: PSI / 4820 W 15th Street / Lawrence, KS Zip Code: 66049

Person to Contact in Emergency: Bob Lawler *Emergency Phone:* 274-2106

Type of Business: _____ Occupancy Classification: _____

Permit(s) Applied for: Removal of one 500-gallon Diesel UST Total Fee: 50.00

Obtain Permits Re: Uniform Fire Code 26 - 4 -108

1-Sub-Section

2-Sub-Section

3-Sub-Section

4-Sub-Section

5-Sub-Section

6-Sub-Section

B STATEMENT

I hereby acknowledge that I have read this application, that the information is correct, and that I am the owner, or the duly authorized agent of the owner. ***This application does not constitute a permit.*** *All permits or certificates issued shall be presumed to contain the proviso that the applicant, his agents and employees shall carry out the proposed activity in compliance with the laws and regulations applicable thereto, whether specified or not, and in complete accordance with approved plans and specifications. Any permit or certificate which purports to sanction a violation of an applicable law or regulation shall be void and any approval of plans and specifications in the issuance of such permit shall likewise be void.*

Deana D Ross
Signature (owner or agent)

8/20/96
Date Signed

C

Plans Required: Yes☐ No☐

Application Approved_____ Denied _____

Date: _____

By _____
Fire Marshal's Office

Officer in Charge: _____

BUREAU OF FIRE PREVENTION

Batt. # _____ Valid _____ thru _____

ENVIRONMENTAL
SERVICES AND PRODUCTS, INC.

WASTE PROFILE DOCUMENT

GENERATOR: City of Kansas City, MO / Public Works Dept
SITE ADDRESS: Kemper Arena / 1800 Genessee / KCMO
MAILING ADDRESS: 17th Floor, 414 E 12th St., City Hall
CITY: Kansas City STATE: MO ZIP: 64106
CONTACT: Bob Lawler
TELEPHONE: (816) 274-2106
EPA ID #

ARR CONTROL #
BROKER: Professional Service Industries, Inc
CONTACT: Deanna Ross
TELEPHONE: (913) 749-2381
ADDRESS: 4820 W 15th Street

TYPE OF BUSINESS:
PROCESS DESCRIPTION: Diesel fuel-impacted water
PROPER D.O.T. SHIPPING NAME:
HAZARD CLASS: UN/NA #: "RQ" VALUE:
EPA WASTE CODES:

CHEMICAL COMPOSITION:

Diesel	.1 %
Water	99.9 %
	%
	%
	%
	%
TRASH/DEBRIS	%

COLOR: Clear ODOR: None.

1. SINGLE PHASE ☑ BI-LAYERED ☐ MULTI-LAYERED ☐
2. LIQUID ☑ SEMI-SOLID ☐ SOLID ☐ LIQUID & SOLID ☐
3. SOLIDS: ☑ <1 ☐ 1-5 ☐ 5-10 ☐ 10-20 ☐ 20-30 ☐ >30%
4. BTU/LB: ☑ <5000 ☐ 5000-7500 ☐ 7500-9000 ☐ 9000-10500 ☐ >10500
5. WATER: ☐ <1 ☐ 1-5 ☐ 5-10 ☐ 10-20 ☐ 20-50 ☒ >50%
6. CHLORIDES %: ☐ 0.1-0.5 ☐ 0.5-1.0 ☐ 1.0-5.0 ☐ 5-10 ☐ 10-20 ☐ >20
7. FLASH POINT: ☐ <70 ☐ 70-100 ☐ 100-140 ☒ 140-200 ☐ >200°F
8. PH: ☐ <2 ☐ 2-5 ☐ 5-7 ☒ 7-10 ☐ 10-12 ☐ >12
9. SPECIFIC GRAVITY: ☐ 0.8-0.9 ☐ 0.9-0.99 ☒ 1.0-1.1 ☐ 1.1-1.3 ☐ >1.3

WASTE IS: RADIOACTIVE Y (N) WATER REACTIVE Y (N) OXIDIZER Y (N) PESTICIDE/HERBICIDE Y (N) POLYMERIZABLE Y (N)
ORGANIC PEROXIDE Y (N) INFECTIOUS Y (N) PYROPMORIC Y (N) CYANIDE-BEARING Y (N) OSHA CARCINOGEN Y (N)
SULFIDE BEARING Y (N)

INDICATE IF THE WASTE CONTAINS ANY OF THE FOLLOWING:

#	CONSTITUENT	TO REG. PPM	CALIF. LIST PPM	ACTUAL PPM
D004	ARSENIC	<5	>500	
D005	BARIUM	<100	N/A	
D006	CADMIUM	<1	>100	
D007	CHROMIUM	<5	>500	
D008	LEAD	<5	>500	
D009	MERCURY	<0.2	>20	
D010	SELENIUM	<1	>100	
D011	SILVER	<5	N/A	
	COPPER	N/A	N/A	
	NICKEL	N/A	>134	
	THALLIUM	N/A	>130	
	ZINC	N/A	N/A	
D012	ENDRIN	<0.02		
D013	LINDANE	<0.4		
D014	METHOXYCHLOR	<10		
D015	TOXAPHENE	<0.5		
D016	2.4 D	<10		
D017	2.4.5 T SILVEX	<1.0		
D018	BENZENE	<0.5		
D019	CARBON TET.	<0.5		
D020	CHLORDANE	<0.03		
D021	CHLOROBENZENE	<100		

#	CONSTITUENT	TO REG. PPM	ACTUAL PPM
D022	CHLOROFORM	<6.0	
D023	O-CRESOL	<200	
D024	M-CRESOL	<200	
D025	P-CRESOL	<200	
D026	CRESOLS	<200	
D027	1.2 DICHLOROBENZENE	<7.5	
D028	1.4 DICHLOROETHANE	<0.5	
D029	1.1 BICHLOROETHYLENE	<0.7	
D030	2.4 DINITROTOLUENE	<0.13	
D031	HEPTACHLOR	<0.008	
D032	HEXACHLOROBENZENE	<0.13	
D033	HEXACHLOROBUTADIENE	<0.5	
D034	HEXACHLOROETHANE	<3.0	
D035	METHYLETHYL KETONE	<200	
D036	NITROBENZENE	<2.0	
D037	PENTACHLOROPHENOL	<100	
D038	PYRIDINE	<5.0	
D039	TETRACHLOROETHYLENE	<0.7	
D040	TRICHLOROETHYLENE	<0.5	
D041	2, 4, 5 TRICHLOROPHENOL	<400	
D042	2, 4, 6 TRICHLOROPHENOL	<2.0	
D043	VINYL CHLORIDE	<2.0	

PCB'S ____ <50 ____ ACTUAL, PPM

ANTICIPATED VOLUME: 11 DRUMS 550 GALLONS ____ LBS. PER ____ ✓ 1X ____ MONTH ____ QUARTER
TYPE CONTAINER: ____ SIZE ____ SAMPLE INCLUDED Y N
ATTACH ALL MSDS'S AND CURRENT ANALYSIS. I CERTIFY THAT ALL INFORMATION SUBMITTED IS ACCURATE AND ALL HAZARDS DISCLOSED:
GENERATOR'S SIGNATURE Deanna L. Ross - PSI for KCMO Public Works Dept. DATE 9-6-96

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. . . . . | Manifest Document No. . . . . | 2. Page 1 of

GENERATOR

3. Generator's Name and Mailing Address
City of Kansas City, MO / Public Works Dept
17th Floor 414 E 12th Street
City Hall

4. Generator's Phone (816) 274 2106

5. Transporter 1 Company Name: ESP, Inc.
6. US EPA ID Number: KS.R.0.0.0.0.0.0.9.2.7

7. Transporter 2 Company Name
8. US EPA ID Number . . . . . .

9. Designated Facility Name and Site Address
Environmental Services and Products, Inc.
100 South 1st St.
Kansas City, KS 66118
10. US EPA ID Number: KS.R.0.0.0.0.0.0.9.2.7

A. Transporter's Phone 913-321-6161
B. Transporter's Phone
C. Facility's Phone 913-321-6161

11. Waste Shipping Name and Description	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol
a. Fuel Impacted Water (Non-RCRA)	1 1	DM	. . . .	
b.	. .	.	. . . .	
c.	. .	.	. . . .	
d.	. .	.	. . . .	

D. Additional Descriptions for Materials Listed Above
Site Location: Kemper Arena
1800 Genessee
K.C. Mo.

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: Robert C. Lawler | Signature: Robert C Lawler | Month 9 | Day 6 | Year 96

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Larry Kampman | Signature: L Kampman | Month 9 | Day 16 | Year 96

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month . | Day . | Year .

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: LEO W. Ambera | Signature | Month 09 | Day 06 | Year 96

ORIGINAL-RETURN TO GENERATOR

American
COMPRESSED STEEL INC
Recycling America's Metal Resources

P.O. Box 2777
Kansas City, Mo. 64142
816/842-7372

1420 Woodswether Rd.
Kansas City, Mo. 64105
Fax: 816/472-5276

CERTIFICATE OF DESTRUCTION

DATE: 8-20-96

TANK OWNER: City of K.C. Mo

ADDRESS: Kemper Arena

CONTRACTOR: H&S - Mat Response

TANK CONSTRUCTION: Steel

TANK SIZE: 500 Gal

TANK ID NUMBER: N/A

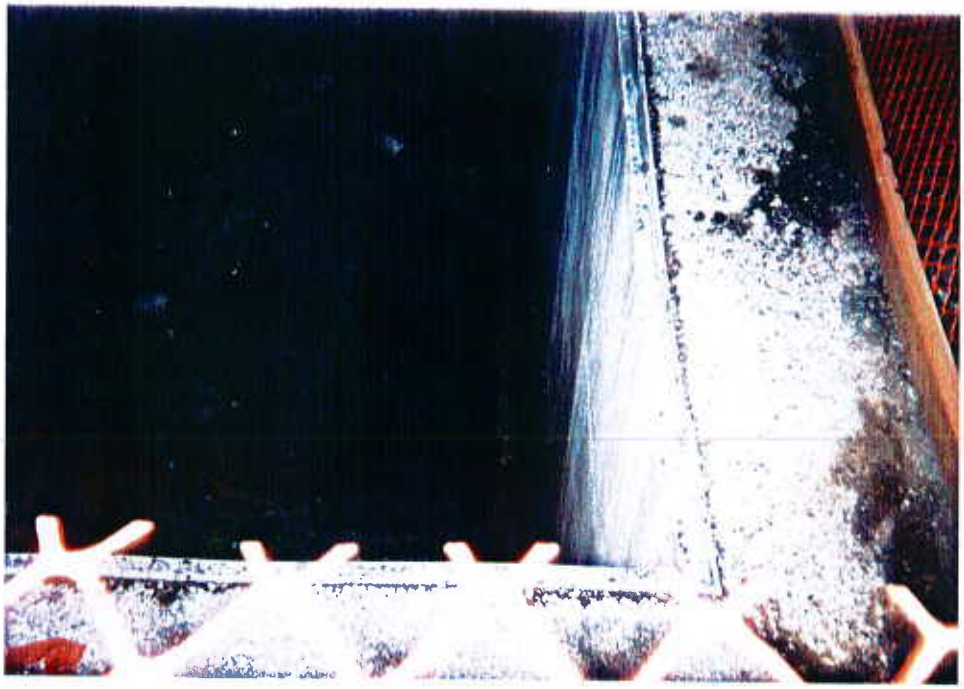
THIS IS TO CERTIFY THAT THE ABOVE MENTIONED TANK WAS DESTROYED / RECYCLED AS OF: 8-24-96, AS SCRAP METAL.

SIGNED: Bradley Lewis

DATE: 8-26-96

APPENDIX C

SITE PHOTOGRAPHS



PHOTOGRAPH 1: Kemper Arena - 550-gallon diesel UST
PHOTOGRAPHER: Deanna Ross
DATE: 8/20/96

PHOTOGRAPH 2: Pumping fuel - impacted water.
PHOTOGRAPHER: Deanna Ross
DATE: 8/20/96

PHOTOGRAPH 3: Removing UST from the building.
PHOTOGRAPHER: Deanna Ross
DATE: 8/20/96

PHOTOGRAPH 4: South end and west side of UST.
PHOTOGRAPHER: Deanna Ross
DATE: 8/20/96

PHOTOGRAPH 5: View of UST bottom (4' bgs).
PHOTOGRAPHER: Deanna Ross
DATE: 8/20/96

PHOTOGRAPH 6: North end and east side of UST.
PHOTOGRAPHER: Deanna Ross
DATE: 8/20/96

PHOTOGRAPH 7: View of south and west walls and bottom of UST pit.
PHOTOGRAPHER: Deanna Ross
DATE: 8/20/96

PHOTOGRAPH 8: View of north and east walls and bottom of UST pit.
PHOTOGRAPHER: Deanna Ross
DATE: 8/20/96

PHOTOGRAPH 9: View of capped UST lines.
PHOTOGRAPHER: Deanna Ross
DATE: 8/20/96

PHOTOGRAPH 10: View south of UST location.
PHOTOGRAPHER: Deanna Ross
DATE: 8/20/96

PHOTOGRAPH 11: View north of UST location.
PHOTOGRAPHER: Deanna Ross
DATE: 8/20/96

APPENDIX D

ANALYTICAL REPORTS

Environmental
Geotechnical
Construction
Consulting • Engineering • Testing

ANALYTICAL REPORT

TESTED FOR: PSI
4820 West 15th Street
Lawrence, KS 66049

PROJECT NAME: City of Kansas City, MO
Public Works Dept.,
Kemper Arena-UST Removal
PROJECT NUMBER: 5986H084
PAGE NUMBER: 1

ATTENTION: Deanna Ross

REPORT DATE: August 26, 1996

PSI LAB REPORT NUMBER: 598-6H084-44162

Attached, please find our analytical report for samples described on the Chain-of-Custody Record. Please reference our report number and direct any questions regarding this report to the individual designated below or to one of our Customer Service Representatives.

Respectfully Submitted,
Professional Service Industries, Inc.

Kelena Wenna
Lawrence Chemistry
Manager

8-26-96
Date

Information To Build On

PROFESSIONAL SERVICE INDUSTRIES, INC.
4820 West 15th St., Lawrence, KS 66049

PROJECT NAME: City of Kansas City, MO
Public Works Dept.,
Kemper Arena-UST Removal
PROJECT NUMBER: 5986H084

Batch #: 44162
Matrix: Soil

Analyte	Results	Units	Method	Analysis Date	Dilution	Analyst	MDL
Client Sample #: DG 1-North End							
Lab Sample #: 888159							
Flashpoint (Open cup)	> 160	°F	D92	8-22-96		LB	75
BTEX							
Benzene	< 2.0	ug/kg	8020	8-23-96	2	MH	2.0
Toluene	< 2.0	ug/kg	8020	8-23-96	2	MH	2.0
Ethylbenzene	< 2.0	ug/kg	8020	8-23-96	2	MH	2.0
Xylenes	< 4.0	ug/kg	8020	8-23-96	2	MH	4.0
Methyl tertiary butyl ether	< 2.0	ug/kg	8020	8-23-96	2	MH	2.0
Surrogate Recovery = 79%							
TPH - EXTRACTABLE							
Gasoline Range	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Kerosene	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Mineral Spirits	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Diesel Range	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Lubrication Oil	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Surrogate Recovery = 107%							
TPH - PURGEABLE							
Gasoline Range	< 0.2	mg/kg	OA-1	8-23-96	2	MH	0.2
Surrogate Recovery = 83%							

PROFESSIONAL SERVICE INDUSTRIES, INC.
4820 West 15th St., Lawrence, KS 66049

PROJECT NAME: City of Kansas City, MO
Public Works Dept.,
Kemper Arena-UST Removal
PROJECT NUMBER: 5986H084

Batch #: 44162
Matrix: Soil

Analyte	Results	Units	Method	Analysis Date	Dilution	Analyst	MDL
Client Sample #: UT 2-South End							
Lab Sample #: 888160							
Flashpoint (Open cup)	> 160	°F	D92	8-22-96		LB	75
BTEX							
Benzene	< 2.0	ug/kg	8020	8-23-96	2	MH	2.0
Toluene	< 2.0	ug/kg	8020	8-23-96	2	MH	2.0
Ethylbenzene	< 2.0	ug/kg	8020	8-23-96	2	MH	2.0
Xylenes	< 4.0	ug/kg	8020	8-23-96	2	MH	4.0
Methyl tertiary butyl ether	< 2.0	ug/kg	8020	8-23-96	2	MH	2.0
Surrogate Recovery = 72%							
TPH - EXTRACTABLE							
Gasoline Range	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Kerosene	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Mineral Spirits	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Diesel Range	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Lubrication Oil	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Surrogate Recovery = 107%							
TPH - PURGEABLE							
Gasoline Range	< 0.2	mg/kg	OA-1	8-23-96	2	MH	0.2
Surrogate Recovery = 75%							

PROFESSIONAL SERVICE INDUSTRIES, INC.
4820 West 15th St., Lawrence, KS 66049

QUALITY CONTROL DATA

Batch #: 44162

Analyte	Blank	MDL	Units	LCS Recovery	Method	Matrix
Flashpoint (Closed cup)	> 160	75	°F	116*%	D92	Soil

*: Recovery above QC acceptance limits.

PROFESSIONAL SERVICE INDUSTRIES, INC.
4820 West 15th St., Lawrence, KS 66049

PROJECT NAME: City of Kansas City, MO
Public Works Dept.,
Kemper Arena-UST Removal
PROJECT NUMBER: 5986H084

QUALITY CONTROL DATA

Batch #: 44162
Matrix: Soil

Analyte	Results	Units	Method	Analysis Date	Dilution	Analyst	MDL
Method Blank							
905502							
BTEX							
Benzene	< 1.0	ug/kg	8020	8-23-96	1	MH	1.0
Toluene	< 1.0	ug/kg	8020	8-23-96	1	MH	1.0
Ethylbenzene	< 1.0	ug/kg	8020	8-23-96	1	MH	1.0
Xylenes	< 1.0	ug/kg	8020	8-23-96	1	MH	1.0
Methyl tertiary butyl ether	< 1.0	ug/kg	8020	8-23-96	1	MH	1.0
Surrogate Recovery = 100%							

CLIENT# (LAB#)	ANALYTE	PERCENT RECOVERY	METHOD
LCS 905503	Benzene	115	8020
	Toluene	114	8020
	Ethylbenzene	114	8020
	Xylenes	97	8020
	Surrogate Recovery = 169*%		
Matrix Spike	Benzene	136*	8020
887820	Toluene	134	8020
	Ethylbenzene	157*	8020
	Xylenes	82	8020
	Surrogate Recovery = 154*%		
Matrix Spike	Benzene	109	8020
Duplicate	Toluene	115	8020
887820	Ethylbenzene	119	8020
	Xylenes	82	8020
	Surrogate Recovery = 91%		

*: Recovery above QC acceptance limits.

PROFESSIONAL SERVICE INDUSTRIES, INC.
4820 West 15th St., Lawrence, KS 66049

PROJECT NAME: City of Kansas City, MO
Public Works Dept.,
Kemper Arena-UST Removal
PROJECT NUMBER: 5986H084

QUALITY CONTROL DATA

Batch #: 44162
Matrix: Soil

Analyte	Results	Units	Method	Analysis Date	Dilution	Analyst	MDL
Method Blank							
905652							
TPH - EXTRACTABLE							
Gasoline Range	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Kerosene	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Mineral Spirits	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Diesel Range	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Lubrication Oil	< 3.0	mg/kg	OA-2	8-23-96	1	MV	3.0
Surrogate Recovery = 108%							

CLIENT# (LAB#)	ANALYTE	PERCENT RECOVERY	METHOD
LCS 905653	**TPH - EXTRACTABLE**		
	Diesel Range	103	OA-2
	Surrogate Recovery = 116%		
Matrix Spike	**TPH - EXTRACTABLE**		
888141	Diesel Range	95	OA-2
	Surrogate Recovery = 109%		
Matrix Spike	**TPH - EXTRACTABLE**		
Duplicate	Diesel Range	99	OA-2
888141	Surrogate Recovery = 114%		

PROFESSIONAL SERVICE INDUSTRIES, INC.
4820 West 15th St., Lawrence, KS 66049

QUALITY CONTROL DATA

Batch #: 44162
Matrix: Soil

Analyte	Results	Units	Method	Analysis Date	Dilution	Analyst	MDL
Method Blank 905502							
TPH - PURGEABLE							
Gasoline Range	< 0.1	mg/kg	OA-1	8-23-96	1	MH	0.1
Surrogate Recovery = 100%							

CLIENT# (LAB#)	ANALYTE	PERCENT RECOVERY	METHOD
LCS 905503	**TPH - PURGEABLE** Gasoline Range Surrogate Recovery = 197*%	101	OA-1
Matrix Spike 887820	**TPH - PURGEABLE** Gasoline Range Surrogate Recovery = 109%	134*	OA-1
Matrix Spike Duplicate 887820	**TPH - PURGEABLE** Gasoline Range Surrogate Recovery = 105%	96	OA-1

*: Recovery above QC acceptance limits.

CHAIN OF CUSTODY RECORD

Professional Service Industries, Inc.

PROJECT NAME: City of Kansas City, MO Public Works Dept. Kemper Arena - UST Removal	REPORT TO: PSI-LEMD	INVOICE TO: →
PROJECT NUMBER: 5986H084	PROJECT MANAGER: Dianna Ross	ADDRESS:
P.O. NUMBER:	ADDRESS:	CITY / STATE / ZIP:
REQUIRED DUE DATE: 8-23-96 (3-5)	CITY / STATE / ZIP:	ATTENTION:
SAMPLES TO LAB VIA:	TELEPHONE: X9411 FAX:	TELEPHONE:
NUMBER OF COOLERS:	REPORT VIA: VERBAL FAX U.S. MAIL/OVERNIGHT	

LABORATORY SUBMITTED TO:

- ☐ 6913 Hwy. 225, Deer Park, TX 77536, (713) 479-8307
- ☐ 4820 W. 15th Street, Lawrence, KS 66049, (800) 548-7901
- ☐ 6056 Ulmerton Road, Clearwater, FL 34620, (813) 531-1446
- ☐ 850 Poplar Street, Pittsburgh, PA 15220, (412) 922-4000

TRANSFER NUMBER	RELINQUISHED BY DATE / TIME	ACCEPTED BY DATE / TIME	SEAL NUMBER
	Ross 8/20/96 3:30p	[illegible] 8-20-96 3:30	

LABORATORY USE ONLY

SAMPLE CUSTODIAN: T. Dalton

DATE / TIME:

LABORATORY USE ONLY

FIELD SERVICES Y/N $

SHIPPING Y/N $

LABORATORY USE ONLY

ANALYTICAL DUE DATE > 8/22/96

REPORT DUE DATE

INORGANIC Sect ____ Row ____ ORGANIC Sect ____ Row 2

PSI PROJECT NAME: LEMD

PSI PROJECT #: 598-6H084

PSI BATCH #: 441162

PARAMETER LIST

SAMPLE IDENTIFICATION	DATE / TIME	COMP-C GRAB-B	SOIL-S WATER-W WASTE-X	LAB USE ONLY LAB NUMBER	NUMBER OF CONTAINERS	BTEX+MTBE	OA1	OA2	Flashpoint
DS 1 - North End	8/20/96 10:15a	B	S	888159	2	✓	✓	✓	✓
UT 2 - South End	↓ 10:20a	↓	↓	888160	2	✓	✓	✓	✓

ADDITIONAL REMARKS: * KCMO Contract

SAMPLER'S SIGNATURE: Dianna Ross

Environmental
Geotechnical
Construction
Consulting • Engineering • Testing

ANALYTICAL REPORT

TESTED FOR: PSI
4820 West 15th Street
Lawrence, KS 66049

PROJECT NAME: City of Kansas City, MO
Public Works Dept.,
Kemper Arena-UST Removal
PROJECT NUMBER: 5986H084
PAGE NUMBER: 1

ATTENTION: Deanna Ross

REPORT DATE: August 26, 1996

PSI LAB REPORT NUMBER: 598-6H084-44161

Attached, please find our analytical report for samples described on the Chain-of-Custody Record. Please reference our report number and direct any questions regarding this report to the individual designated below or to one of our Customer Service Representatives.

Respectfully Submitted,
Professional Service Industries, Inc.

Rebecca Warren
Lawrence Chemistry Manager

8-26-96
Date

Information To Build On

PROFESSIONAL SERVICE INDUSTRIES, INC.
4820 West 15th St., Lawrence, KS 66049

PROJECT NAME: City of Kansas City, MO
Public Works Dept.,
Kemper Arena-UST Removal
PROJECT NUMBER: 5986H084
PAGE NUMBER: 2

Batch #: 44161
Matrix: Water

Analyte	Results	Units	Method	Analysis Date	Dilution	Analyst	MDL
Client Sample #: UST Water							
Lab Sample #: 888158							
Flashpoint (Closed cup)	> 160	°F	D93	8-22-96		LB	75
BTEX							
Benzene	< 1.0	ug/L	8020	8-25-96	1	LG	1.0
Toluene	< 1.0	ug/L	8020	8-25-96	1	LG	1.0
Ethylbenzene	< 1.0	ug/L	8020	8-25-96	1	LG	1.0
Xylenes	2.1	ug/L	8020	8-25-96	1	LG	2.0
Methyl tertiary butyl ether	< 1.0	ug/L	8020	8-25-96	1	LG	1.0
Surrogate Recovery = 67%							
TPH - EXTRACTABLE							
Gasoline Range	< 0.1	mg/L	OA-2	8-21-96	1	MV	0.1
Kerosene	< 0.1	mg/L	OA-2	8-21-96	1	MV	0.1
Mineral Spirits	< 0.1	mg/L	OA-2	8-21-96	1	MV	0.1
Diesel Range	0.3	mg/L	OA-2	8-21-96	1	MV	0.1
Lubrication Oil	< 0.1	mg/L	OA-2	8-21-96	1	MV	0.1
Surrogate Recovery = 112%							
TPH - PURGEABLE							
Gasoline Range	< 0.1	mg/L	OA-1	8-25-96	1	LG	0.1
Surrogate Recovery = 72%							

PROFESSIONAL SERVICE INDUSTRIES, INC.
4820 West 15th St., Lawrence, KS 66049

QUALITY CONTROL DATA

Batch #: 44161

Analyte	Blank	MDL	Units	LCS Recovery	Method	Matrix
Flashpoint (Closed cup)	> 160	75	°F	101%	D93	Water

PROFESSIONAL SERVICE INDUSTRIES, INC.
4820 West 15th St., Lawrence, KS 66049

PROJECT NAME: City of Kansas City, MO
Public Works Dept.,
Kemper Arena-UST Removal
PROJECT NUMBER: 5986H084

QUALITY CONTROL DATA

Batch #: 44161
Matrix: Water

Analyte	Results	Units	Method	Analysis Date	Dilution	Analyst	MDL
Method Blank							
905589							
BTEX							
Benzene	< 1.0	ug/L	8020	8-25-96	1	LG	1.0
Toluene	< 1.0	ug/L	8020	8-25-96	1	LG	1.0
Ethylbenzene	< 1.0	ug/L	8020	8-25-96	1	LG	1.0
Xylenes	< 2.0	ug/L	8020	8-25-96	1	LG	2.0
Methyl tertiary butyl ether	< 1.0	ug/L	8020	8-25-96	1	LG	1.0
Surrogate Recovery = 100%							

CLIENT# (LAB#)	ANALYTE	PERCENT RECOVERY	METHOD
LCS 905590	Benzene	117	8020
	Toluene	110	8020
	Ethylbenzene	111	8020
	Xylenes	115	8020
	Methyl tertiary butyl ether	141	8020
	Surrogate Recovery = 113%		
Matrix Spike	Benzene	110	8020
888158	Toluene	101	8020
	Ethylbenzene	106	8020
	Xylenes	109	8020
	Methyl tertiary butyl ether	131	8020
	Surrogate Recovery = 110%		
Matrix Spike	Benzene	108	8020
Duplicate	Toluene	98	8020
888158	Ethylbenzene	102	8020
	Xylenes	106	8020
	Methyl tertiary butyl ether	127	8020
	Surrogate Recovery = 110%		

PROFESSIONAL SERVICE INDUSTRIES, INC.
4820 West 15th St., Lawrence, KS 66049

PROJECT NAME: City of Kansas City, MO
Public Works Dept.,
Kemper Arena-UST Removal
PROJECT NUMBER: 5986H084

QUALITY CONTROL DATA

Batch #: 44161
Matrix: Water

Analyte	Results	Units	Method	Analysis Date	Dilution	Analyst	MDL
Method Blank							
905642							
TPH - EXTRACTABLE							
Gasoline Range	< 0.1	mg/L	OA-2	8-21-96	1	MV	0.1
Kerosene	< 0.1	mg/L	OA-2	8-21-96	1	MV	0.1
Mineral Spirits	< 0.1	mg/L	OA-2	8-21-96	1	MV	0.1
Diesel Range	< 0.1	mg/L	OA-2	8-21-96	1	MV	0.1
Lubrication Oil	< 0.1	mg/L	OA-2	8-21-96	1	MV	0.1
Surrogate Recovery = 105%							

CLIENT# (LAB#)	ANALYTE	PERCENT RECOVERY	METHOD
LCS (1)	**TPH - EXTRACTABLE**		
905643	Diesel Range	93	OA-2
	Surrogate Recovery = 118%		
LCS (2)	**TPH - EXTRACTABLE**		
905644	Diesel Range	88	OA-2
	Surrogate Recovery = 111%		

PROFESSIONAL SERVICE INDUSTRIES, INC.
4820 West 15th St., Lawrence, KS 66049

PROJECT NAME: City of Kansas City, MO
Public Works Dept.,
Kemper Arena-UST Removal
PROJECT NUMBER: 5986H084

QUALITY CONTROL DATA

Batch #: 44161
Matrix: Water

Analyte	Results	Units	Method	Analysis Date	Dilution	Analyst	MDL
Method Blank 905589							
TPH - PURGEABLE							
Gasoline Range	< 0.1	mg/L	OA-1	8-25-96	1	LG	0.1
Surrogate Recovery = 100%							

CLIENT# (LAB#)	ANALYTE	PERCENT RECOVERY	METHOD
LCS 905590	**TPH - PURGEABLE**		
	Gasoline Range	107	OA-1
	Surrogate Recovery = 117%		
Matrix Spike 888158	**TPH - PURGEABLE**		
	Gasoline Range	101	OA-1
	Surrogate Recovery = 120%		
Matrix Spike Duplicate 888158	**TPH - PURGEABLE**		
	Gasoline Range	99	OA-1
	Surrogate Recovery = 121%		

CHAIN OF CUSTODY RECORD

Professional Service Industries, Inc.

PROJECT NAME: City of Kansas City, MO Public Works Dept. Kemper Arena - UST Removal	REPORT TO: PSI - LEMD	INVOICE TO:
PROJECT NUMBER: 5986H084	PROJECT MANAGER: Deanna Ross	ADDRESS:
P.O. NUMBER:	ADDRESS:	CITY / STATE / ZIP:
REQUIRED DUE DATE: 8-22-96	CITY / STATE / ZIP:	ATTENTION:
SAMPLES TO LAB VIA:	TELEPHONE: X9411 FAX:	TELEPHONE:
NUMBER OF COOLERS:	REPORT VIA: VERBAL FAX / U.S. MAIL/OVERNIGHT	

LABORATORY SUBMITTED TO:

- ☐ 6913 Hwy. 225, Deer Park, TX 77536, (713) 479-8307
- ☐ 4820 W. 15th Street, Lawrence, KS 66049, (800) 548-7901
- ☐ 6056 Ulmerton Road, Clearwater, FL 34620, (813) 531-1446
- ☐ 850 Poplar Street, Pittsburgh, PA 15220, (412) 922-4000

TRANSFER NUMBER	RELINQUISHED BY DATE / TIME	ACCEPTED BY DATE / TIME	SEAL NUMBER
	Ross 8/20/96 3:30p	Tamu Barton 8-20-96 3:30	

LABORATORY USE ONLY

FIELD SERVICES Y/N $

SHIPPING Y/N $

LABORATORY USE ONLY

ANALYTICAL DUE DATE > 8/21/96

REPORT DUE DATE

INORGANIC Sect ____ Row ____ ORGANIC Sect ____ Row 2

PSI PROJECT NAME LEMD

PSI PROJECT # 598-6H084

PSI BATCH # 44161

LABORATORY USE ONLY

SAMPLE CUSTODIAN T. Barton DATE / TIME

PARAMETER LIST

SAMPLE IDENTIFICATION	DATE / TIME	COMP-C GRAB-B	SOIL-S WATER-W WASTE-X	LAB USE ONLY LAB NUMBER	NUMBER OF CONTAINERS	BTEX+MBE	OAI	OAI2	Flashpoint
UST Water	8/20/96 8:40a	B	W	888158	4	✓	✓	✓	✓

ADDITIONAL REMARKS * KCMO Contract

SAMPLER'S SIGNATURE Deanna Ross